Vol. X APRIL 1899 No. 4

The National Geographic Magazine

AN ILLUSTRATED MONTHLY

CONTENTS

WASHINGTON
PUBLISHED BY THE NATIONAL GEOGRAPHIC SOCIETY

For Sale by Newsdealers

In Great Britain, New York: 136 Fourteenth Street, Washington:
216 Western Avenue, Chicago: 57 Madison Street, Kansas City:

Price 25 Cents $2.50 a Year

entered at the Postoffice in Washington, D. C., as second-class mail matter

THE
National Geographic Society

SECRETARY'S OFFICE

Rooms 117-118, Corcoran Building, Fifteenth and F Streets N. W., Washington

---

TREASURER'S OFFICE

U. S. Geological Survey, 1330 F St. N. W., Washington

National Geographic Magazine—Back Numbers

The Society is prepared to purchase Vols. I, II, III, and IV, or Nos. 2 and 4 of Vol. I, 2 and 4 of Vol. II, 1, 3, 5 and 6 of Vol. IV, and 6 of Vol. VII. Members or subscribers having these volumes or single numbers to dispose of are requested to communicate with the Secretary.

SOURCE OF THE LITTLE FORK OF THE SASKATCHEWAN

THE
National Geographic Magazine

VOL. X APRIL, 1899 No. 4

SOURCES OF THE SASKATCHEWAN

By Walter D. Wilcox

The Saskatchewan, one of the larger rivers of North America, takes its source in the rugged fastnesses of the Rocky mountains, and flows eastward over the sparsely inhabited plains of southern Canada till it reaches Lake Winnipeg. Save for a rapid at its mouth, the river is navigable for steamboats for about 1,000 miles. Strangely enough its two chief branches come from the same ice-fields in the high Rockies, and after diverging several hundred miles unite far out on the rolling plains about 900 miles from their source.

From the Canadian Pacific railway the easiest way to reach the headwater tributaries of the Saskatchewan is by ascending the Bow river to its source. My friend, Mr R. L. Barrett, and I left the station of Laggan on July 12, 1898, bound northward, in the hope of reaching the Athabasca pass and measuring the height of Mt Brown and Mt Hooker. For such an extensive journey, which would require two months to accomplish, we had five saddle-horses and ten pack-horses to carry our provisions and camp necessaries. To manage the horses and arrange our camps we engaged two skilled packers, Tom Lusk and Fred Stephens (the latter an expert woman) and also a cook.

On the third march from civilization we came to the upper Bow lake, which is about 20 miles from the railroad. This lake, though only four miles long, has five surroundings, being closely pressed by grand precipices luring with ice and frequently echoing to the thunder of avalanches, while its forested shores and green forests make it one of the most attractive spots in the

Rockies. A muddy stream descends from a glacier beyond the head of the lake and pollutes its clear waters, while a trout brook comes from an upland valley lying to the northwest, and this latter stream is perhaps the true source of the Bow. Up the valley countless springs and melting snowbanks, with large tracts of swampy land, contribute their waters from every side. The level of the valley rises into a gently sloping plain, the last rivulet is passed, and one stands on the divide overlooking the Little Fork of Saskatchewan river.

Those who have reached this region have had an opportunity of seeing one of the grandest views that the mountains offer. Far to the west are the lofty peaks of the highest range of the Canadian Rockies, buried in perpetual snow and discharging their surplus ice by glaciers in every lateral valley. Deep set amid dark precipices, such a glacier is to be seen west of the pass. From two enormous ice-tunnels a large stream issues and sweeps in a devious course over a barren gravel-wash for a mile or more, till it enters a lake. Then, as the clear stream leaves the lake and winds away to the northwest, it is lost to view, hidden amid deep forests, and only reveals its course here and there where it expands into one or another of the many lakes which this valley contains. Between the spurs of the summit range on the west and a parallel range on the east, the great trough or valley which carries the Little Fork and the North Fork of the Saskatchewan draws away in a nearly straight line for more than 60 miles, till it is lost in the blue haze of distance.

The summit of the pass is a delightful region, situated at an altitude of 6,700 feet, or only 300 feet below tree-line. The woodland is consequently rather open and abounds in meadows, while the spruce trees, many of which must be forty or five centuries old, have that symmetrical beauty of form rarely seen where there is less space and light in the crowded forests of the deep valleys.

It seemed best to camp on the summit, as a forest fire had broken out in the Little Fork valley some miles distant and was sweeping furiously up the mountains to the east. Mr Barrett and one of the packers spent the next day in making a horseback excursion to investigate the extent of the flre and see if there was a way through. They returned in the evening, after a hard day's travel, without having reached the fire. It was evident that the distance had been much underestimated, perhaps owing to the great extent of view from the pass; but it was

SKETCH

OF

THE BASINS OF THE

SASKATCHEWAN

FROM A RECENT SURVEY

BY

WALTER D. WILCOX.

SCALE OF MILES

SCENE ON THE LITTLE FORK OF THE SASKATCHEWAN

small comfort to know that the fire was farther off than had been supposed, as we had to change our idea of its magnitude. As there was nothing to be gained by waiting, we started a short march into the valley the next day.

The descent into the Little Fork valley is much steeper than on the other side of the pass, and in the first three miles the trail drops about 1,000 feet. These mountain trails were used by the Indians long before the whites came into the country. In every important valley, especially where game abounds, there are trails which prove of great value to the traveler.

As our horses were winding through a deep forest, a bird appeared which resembled a blue bullfinch, flitting from tree to tree and following us closely. Somewhat later it gave the most remarkable imitation of tameness that I have ever seen. Having followed us for about two miles, it waited in a tree during the bustle and confusion of making camp, but in the afternoon, when all was quiet and some of our men were asleep, the bird became exceedingly familiar, walking on the ground near us and finally perching on our extended hands. It was soon evident that the object of our visitor was to catch mosquitoes, which were hovering in swarms around our hands. It pecked at a ring on my hand, at our needles, and in fact any metal article, but the climax was reached when by accident the bird saw its own image in a small looking-glass which lay on the ground. Then, with extended wings and open bill, it uttered cries of rage and pecked madly at the glass in which an enemy appeared. Among the solitudes of mountain forests squirrels, finches, and whiskey-jacks often show unusual confidence in man, but this particular instance is remarkable, because the bird would alight on our persons even after it had been momentarily though gently detained several times as a prisoner in my hand.

Further investigation showed that it was possible to get our horses through the fire, which had spent its energy on a large extent of green timber, so after three hours' travel from camp we came to the burning trees, where the fire was advancing slowly, as there was a calm. Then came several miles of the recently burned area, now changed to a forest of blackened sticks, some of which were already fallen, with here and there a column of smoke rising from smouldering mass, and everything half concealed in a snowy covering of ashes. At the other edge of the fire there was more danger, and frequently some tree would flash up and send a scorching heat toward us. We were chiefly anx-

ions that the smoke should not take fire and cause a stampede among the horses, so for a considerable distance we drove our animals along the edge of a lake and frequently waded deep in the water to avoid the heat of blazing trees.

After an exhausting march of six hours we made our camp in a muskeg, or swamp, about half a mile from the fire. The wind, however, which had been increasing for a time, began to carry the fire toward us, and our situation soon became alarming when some heavy timber began to blaze and the columns of flame, shooting hundreds of feet into the air, made a terrifying roar, which caused our horses to stop feeding. At one time a funnel-shaped whirlwind about 200 feet high formed over the heated area and remained there a few moments.

At the rate of progress the fire was making, we should soon have been surrounded had we not packed up and moved a mile further down the valley. The second camp was made by the side of a considerable stream, wide enough to stop the fire; but toward evening cloud banners began to form at the peaks of the mountains, and next day, after many weeks of drought, rain fell steadily for ten hours and fortunately extinguished for a time the fires that were destroying this beautiful valley.

We were now two days' journey down the Little Fork valley, a distance of about 18 miles in a straight line. We remained in camp the next day to do a little survey work from a mountain to the east. From this point, at an altitude of 8,100 feet, the Little Fork valley appears straight, deep, and comparatively narrow, with a number of lateral valleys coming in from the west side and cutting the mountain masses into projecting spurs. The strata of the mountains are for the most part nearly horizontal, and the cliffs are frequently almost vertical. There were six lakes in view from our survey point, of which two, each about a mile long, were merely expansions of the river, three were in lateral valleys, and one lay far up the valley where the river takes its source. The lateral valleys head in the summit range to the west and probably have never been visited.

The scenery is very grand near the lakes. A striking peak about 10,000 feet in height, with a precipitous rock face and wedge-shaped summit, stands guardian, and, together with the jagged mountains near it, helps to give a gloomy, fiord-like appearance to the region. Mt Murchison is supposed to lie in a group of mountains to the east of this plateau, and, as seen from the Pipestone pass by Dr Hector, was estimated to be 13,000

[illegible]. It has never been seen from the Little Fork valley, though a [illegible] at a [illegible] distance.

On July 22 we marched six hours and reached Saskatchewan river. The trail is very good, and runs for many miles through forests of splendid timber, especially in the great valley of the Saskatchewan. At the place of junction the Saskatchewan is a rapid stream about 150 yards wide and apparently quite deep, and the pale blue waters of the Little Fork are soon lost to view in the muddy volume of the main river. The Saskatchewan valley is about four miles wide at this point, the river itself flowing between beds of gravel drift, and while the massive mountains on every side are between 10,000 and 12,000 feet high, they are less imposing than usual because of their distance. The main river runs almost northeast, cutting through the mountain ranges, and taking its source to the southwest among the highest glacier-bearing peaks of the main range.

A very large tributary, which we called the "North Fork," comes in from the northwest and joins the main river about one mile above the Little Fork. This river is not correctly placed on Palliser's map, nor was there any available information about the region whence it comes. Even Stony Indians who travel through these mountains know little of this river, because, it is [illegible] years ago one of their tribe was lost while hunting in that region, and they think he was destroyed by an evil spirit [illegible] there. At all events, they will take no chances in visiting that part of their country now.

Our route to the Athabasca, however, lay up this river, and our first duty was to find a ford across the Saskatchewan. A day was spent in finding a safe place, as the river was in summer flood, though not at its highest stage. At [illegible], with a character-

the river spreads out among low sand islands to the width of nearly half a mile.

A sense of relief came when, the next day, after fording the turbulent Little Fork, we had crossed the main river, which is of great size at this point, only 40 miles from its most distant sources, and were safely on its north side. Turning northward along a high bluff, we came in a short time to the North Fork, which appears to equal in size the so-called Middle Fork or main river. About one mile above its mouth the North Fork flows between rocky banks, and there is a fall or rapid in a constricted channel [illegible] with immense masses of fallen cliff, where the water surges

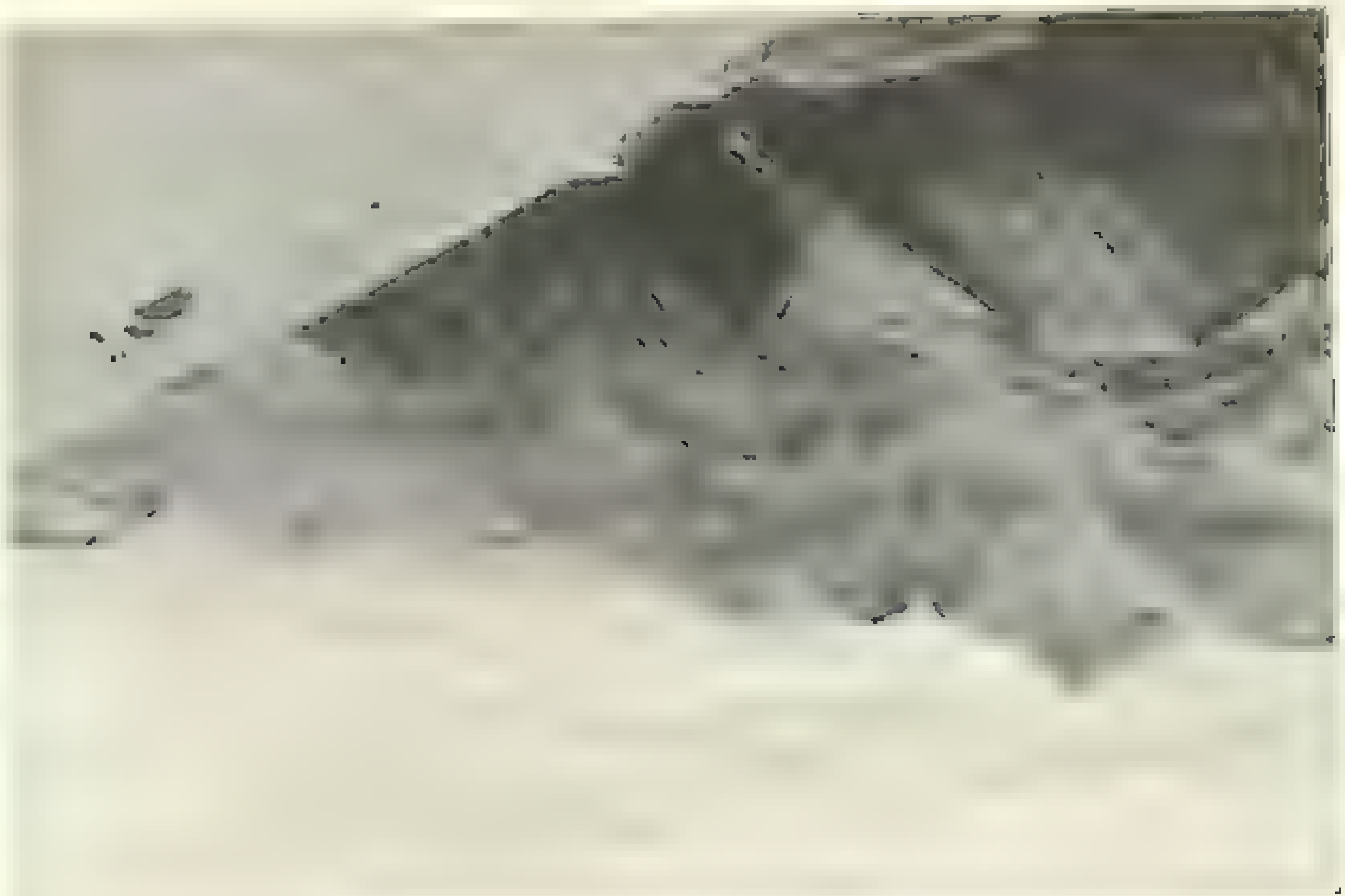
ing forest and a treacherous black windfall, [illegible] tree-felling [illegible] a fine trail through a light pine forest, and then [illegible] a heavy [illegible] we crossed [illegible] two hours to make half a mile, and we were [illegible] progress [illegible] could not have [illegible].

On the following two days we advanced about 10 miles up the valley, but on a trail where there were green forests, but [illegible]. One [illegible] when [illegible] along a steep bank of the river a pack-horse [illegible] over some logs and rolled over into a deep pool. The horse was carrying over 200 pounds of flour, and [illegible] the bottom of the river. [illegible] side [illegible]. No [illegible] however, as [illegible] water only to a slight depth, and very [illegible].

Ten miles [illegible] another stream from the west unites with the North Fork. As the two streams are about equal in size we were at a loss which one to follow in order to reach the Athabasca. In order to get a more extended view of the country, an ascent was made of a mountain which lies between the two rivers. On the summit, at an altitude of 8,[illegible] feet, it was seen that the western stream takes its source in a large glacier about 12 miles west. A [illegible] of [illegible] branch streams was given by [illegible], but it must be confessed that less is known about this river than of any other source of the Saskatchewan. As a result of this ascent we were [illegible] our route [illegible] up the western branch. The other valley, however, seemed exceedingly deep, [illegible] canyon [illegible] very short distance that it was [illegible]. Though the [illegible] was [illegible] from forest fires, in spite of [illegible] weather of late, I tried some photographic work, [illegible] but [illegible], when I was [illegible] for a plate-holder, the strong wind blew my camera over and broke it [illegible] on the rough limestone rocks. The most [illegible] parts, the ground glass [illegible] fortunately escaped, while the [illegible] and brass work were [illegible]. With a [illegible] for such [illegible] the camera was [illegible] but after a few hours' labor [illegible] did excellent work later in the trip. [illegible] our men returned in the evening and reported that there was a trail in the deep valley to the northwest.

way, the splendid arena around us, our great height, and the tremendous grandeur of the mountains and valleys, all helped to make our surroundings most enjoyable. Above the summit of

[illegible]



snowy, triangular peak covered with ice, which now began to appear in the west. The colors of rocks and cliffs in the distant peaks and precipices seemed absolutely black in contrast with the remarkable whiteness of the snow surface on all sides. Overhead, the sky was intensely blue, but marked by detached wisps of white cirrus cloud, spun out like tufts of cotton into streaks and curving lines.

At an altitude of 9,800 feet, or more than 4,000 feet above our camp, I at length reached the summit of the mountain crest. It [illegible] a somewhat higher point, which was the true summit. The [illegible] feet deep, and, mindful of the terrible alpine accidents caused by cornices, I kept well away from the edge, below which it seemed to drop sheer several thousand feet. The snow was sparkling in the sun, and of the myriads of bright points about [illegible] were either green, blue, or amber-colored, like emeralds, sapphires and topazes. From intense frost my gloves were frozen [illegible] notes and sketches had to be done with bare hands.

The most conspicuous and interesting part of the whole vast panorama was the lofty summit of Mt Forbes, beyond the valley of Glacier lake. This mountain and another about [illegible] miles to the west were the two highest peaks in sight, and each is probably between 13,000 and 14,000 feet in altitude. Glaciers of very large size came from these mountains down to within a few miles above the lake. The whole valley of the Saskatchewan [illegible] and in the opposite direction, for many miles beyond the mouth of the North and Middle forks was clearly visible. There was a very high rocky peak in a group of mountains east of the Middle Fork that answered the description of Hector's Mt Murchison, which he calculated to be 13,500 feet high. This mountain is further away in a group that must be 75 miles in circumference, and so is rarely seen. There was a fine view to the north, where a wide and desolate valley, thousands of feet below, was dominated by a castle-like mountain over 11,000 feet high, probably Mt Lyell, with great cliffs like ancient towers and battlements. [illegible] of four photographs exposed on this trip only one was successful, and I had a narrow escape from failing altogether in getting a view of Mt Forbes, which, from [illegible] of its great height is veiled from view by clouds and is frequently invisible for weeks at a time.

trail which was a cause for no little apprehension, as we were far from the railroad.

On Friday, October 21, the sky was still threatening, though very little snow had fallen. We were on the march soon after ten o'clock, and reached the summit of the Howse pass in an hour. This pass was made known to the traders of the North-west Fur Company about 18[illegible] by a man of the name of Howse or Hawes, and was at one time much used by the Kootenay Indians who came over the mountains and bartered with the fur-traders at a place about three days' journey down the Saskatchewan, now known from [illegible] as the Kootenay plain. The route is now impassable as fire has run through the forests in the lower part of the Blaeberry valley, and the timber has fallen for many miles. The pass itself is about 15 miles from the Little Fork and [illegible] feet in altitude.

At this point we were seven days' journey from the railroad by [illegible] two routes, [illegible] one by which we had come in at first, [illegible] which [illegible] going down the Blaeberry one day's march and then [illegible] pass to the southeast would bring us to the Kicking Horse river [illegible] latter route seemed preferable, as it would be through a new region.

[illegible] Blaeberry is one of the most trying experiences [illegible] the mountains offer. We continued to descend [illegible] fallen timber [illegible] so that our horses were compelled to climb up and down steep banks, to scramble over [illegible] slopes, or sometimes to force a way down the [illegible] strewn bed of the stream. As there was no trail [illegible] had to find the way by whatever route appeared best, and in several places our horses had to [illegible] their haunches down steep banks, [illegible] plunge into the torrent, [illegible] at the greatest risk [illegible] the [illegible] trial of our own nerves. A trail appeared after three hours of such [illegible], and we camped about four miles down the valley. It rained hard [illegible]

On Saturday, October 22, we followed up a stream which comes in from the [illegible] and [illegible] 5,000 feet [illegible] through a [illegible] forest. The snow, which was hardly apparent in the Blaeberry valley, became eighteen inches deep near the tree-line. Snow [illegible] fell at frequent intervals throughout the day and [illegible] the landscape, so that [illegible] bearings were [illegible]. After [illegible] to

failed in the descent, so we camped in the edge of a heavy forest on the mountain side. The snow was very deep and the temperature low, so that it was all the harder for our horses, which had to be turned loose in the timber with no chance to feed. The heavily laden spruce trees sent down avalanches of snow at every stroke of the axe, so it was very difficult to keep our camp fire going, which was the more important as we had no water except by melting snow.

[illegible]

[illegible]ing. It was very hard work packing up, as all the ropes, canvas covers, tents, and blankets were frozen stiff and covered with [illegible] marches and little or no feed. They were hungry enough to bite off twigs and woody branches from the bushes which had a few buds on them. We did not get off till nearly noon, and then made a short traverse of the forested mountain side and then commenced a gradual descent in the hope of reaching a valley bottom that leads to the pass. We had no sooner started than a heavy snowstorm came on, shutting out everything from view. There was no trail, as the pass had never been used before this summer. In about two hours we reached a valley bottom that we supposed to be the right one, though Peyto, who had taken the only other party through that ever crossed this pass, did not recognize it for some time. The deep snow and the constant descent were very trying to our famished horses. One or two of us went ahead and broke a trail for them, but in spite of this some of our pack-animals lay down in the snow exhausted and groaned [illegible]ally. We at length reached the stream and the [illegible] half a mile or so [illegible]. The snow was 24 inches deep on the level and in depressions of the ground it was between three and four feet. Here our horses got a little grass by pawing away the snow, a trick that they learn during the hard winters on the plains.

We were now at the head of the North branch of the Kicking Horse river, and it was practically a constant descent to Field, where we arrived in three days after having been out seventeen days. On this excursion every camp but the first was made on snow-covered ground, and there were only three days on which some snow did not fall. No small measure of our success was due to the splendid outfit of horses supplied by Mr. T. E. Wilson, of Banff, who gave me the pick of his pack-animals. Very much depends on the training and strength of the horses in a rough country, where countless obstacles have to be overcome.

fallen trees passed over, streams and rivers crossed, the close-set mazes of deep forests penetrated, and perhaps many miles of scramble over the treacherous debris of huge rock slides. The dangers of [illegible], the sudden changes of fickle weather, the [illegible] smoke of forest fires, and blinding snow-storms, make a particular journey or mountain ascent may be accomplished rests in a great measure on the experience of the guides, and it is no cause for wonder that the traveler sometimes seems to take a certain pride in the fact that beasts [illegible] at the expense of their lives.

Speaking generally, [illegible] between the snow-line and woods, [illegible] for this part of the Rockies, and large areas are covered by snow fields or glaciers. The general character of the scenery is remarkably grand and [illegible] variety [illegible], depending [illegible] the point of view. When viewed, however, from a high [illegible] due to the fact that thousands of mountain peaks are seen [illegible] in height [illegible] the higher peaks [illegible] 11,000 or 12,000 feet above sea level [illegible] partly lost.

All the larger streams come from glaciers, and consequently reach their highest stage during the hot weather. Their waters are turbid with glacial mud, and they [illegible] rise by day, when the sun [illegible], and fall at night, when freezing [illegible]. The [illegible] Middle Fork [illegible] is one of the grandest and most imposing not only in the Rockies, but possibly in any mountain region of the world, [illegible] the Athabasca pass.

The forests which cover [illegible] mountains up to a height of 7,000 feet above sea level are chiefly of [illegible] spruce [illegible] of jack pine. The [illegible] characteristic of the mountains farther south, was [illegible] not seen in these valleys.

[illegible] topographical work [illegible] that [illegible] to be done in the way of exact measurement of mountains and glaciers. However, the very fact [illegible] among these mountains is still for the most part unexplored [illegible] the pleasure of visiting [illegible], one of such exceptional grandeur.

EXPLORATION IN THE CANADIAN ROCKIES

HOW LONG A WHALE MAY CARRY A HARPOON

*

The first few pages are missing from the Nantucket whaling journal of Ezra Pell, covering the years 1841 to 1844. What remains begins in the middle of a sentence about the price of rendered oil and ends with the author's decision to leave the sea. Between those two points lies a record of ordinary labor, ordinary weather, and one ordinary whale that was not ordinary at all.

Pell was twenty-three when he signed on as a boatsteerer aboard the brig *Morning Star*. He had never seen a whale before. He had never been more than a day's sail from land before. He had never, by his own account, been afraid of anything he could not name. The journal begins on the day he learned to be afraid of all three.

*

The *Morning Star* was a small vessel, even by the standards of the time. She carried a crew of twenty-six and a cargo capacity of just under three hundred barrels. Her captain, Obadiah Crane, was a man of few words and fewer illusions. Pell's first entry records that Crane struck the first whale of the voyage on the fourteenth day out and lost it to a broken line on the seventeenth. He struck another on the twenty-first and lost it to a capsized boat on the twenty-second. By the end of the month the ship had taken no whales and the crew had begun to grumble.

The grumbling stopped on the morning of the thirtieth, when the lookout at the masthead cried that he had raised a spout to the northeast. Pell was in the second boat, pulling the starboard oar, and he remembers the moment with a clarity he has not managed for anything since. The whale was a sperm bull, large but not enormous, and it sounded within a minute of being struck. The line ran out so fast that the tub had to be doused with water to keep it from smoking.

The whale was gone for nearly two hours. When it finally rose, it was almost a mile to leeward and showing no interest in fighting. Crane killed it with a lance from the bow and ordered the crew to begin cutting in before the sun set. They worked through the night by lantern light, and Pell, who had never held a flensing knife in his life, was given one and told to keep up. He did, though his hands blistered badly enough that he could not close them for a week.

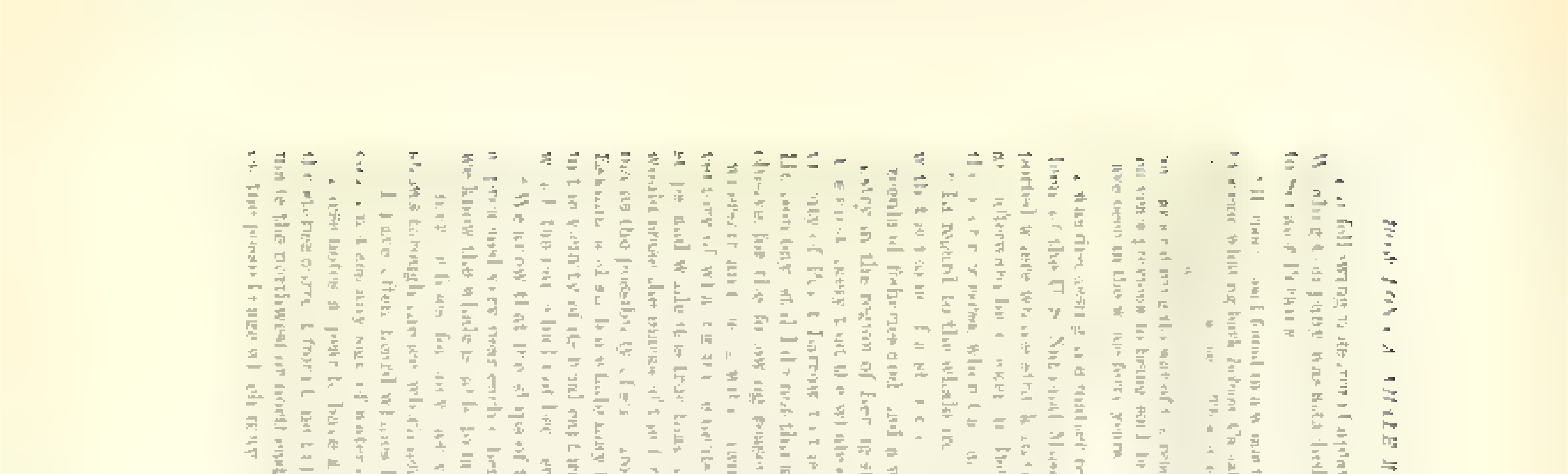
*

The journal's tone changes after that. The entries grow longer, more detailed, and more willing to linger on things that are not strictly necessary to the running of the ship. Pell describes the weather in terms of how it will affect the whales, the sea in terms of what it hides, and the men in terms of what they will do when they are tired, frightened, or drunk. He records the names of the ships they speak and the gossip they exchange, and he begins to keep a separate list of the whales they see but do not take, with notes on size, direction, and behavior. The list runs to forty-three entries by the time the journal ends.

He also begins to write about himself in the third person, as if he were describing a stranger. "Pell pulled the oar until his shoulders burned and then pulled it longer." "Pell was given the knife and told to keep up." The habit is peculiar, and it suggests a man who found the work easier to endure than to understand. By the time the journal breaks off, Pell has been at sea for nearly two years, has survived a storm that dismasted the *Morning Star*, and has killed, by his own count, seventeen whales. He has also begun to dream about land, and about a woman named Hannah Coffin whom he has met twice and written to once.

*

The last entry is dated March 4, 1844, and it is only a few lines long. Pell records that the ship has been in port at Fayal for three weeks, that the cooper has died of fever, and that he has decided not to sign on for another voyage. He does not say what he intends to do instead. He does not say whether he expects to see Hannah Coffin again. He simply stops writing, as if the page had run out, though there are many blank pages left in the book. The journal was found in a sea chest in a boarding house in New Bedford in 1902, sixty years after the last entry was made, by a man who was looking for something else entirely.



SCHEDULING IN THE UNITED KINGDOM IN 1920

GEOGRAPHIC LITERATURE

[illegible] expressed in terms not intended [illegible] unnecessarily general.

A railroad is essentially a monopoly. [illegible] [illegible] upon the [illegible] which are reaches [illegible] place. It is [illegible]

[illegible]

[illegible] Therefore, we should expect [illegible] [illegible]

[illegible]

[illegible] One of [illegible] regulate [illegible]

and discriminations. [illegible] between [illegible] endeavored to eradicate [illegible] perpetuate the cause. [illegible] rates that are relatively just without conference and agreement, [illegible] established [illegible] observed, [illegible]

[illegible] for the purpose of doing what [illegible] The logical way to remove [illegible] them on the [illegible] restricted [illegible] organization, [illegible] We are [illegible]

[illegible] independence [illegible]

[illegible] should be [illegible] protect [illegible]

While [illegible] have developed [illegible] The [illegible] in the interest of [illegible] that were [illegible] years ago, [illegible] to discover [illegible] spirit of compromise which [illegible] [illegible] whenever amendatory legislation can be secured, [illegible] to make every reasonable [illegible] the rights of the [illegible]

[illegible] report contains the usual review of the year's work [illegible] [illegible] sketch of traffic [illegible]

It is rather strange that the attention of the commission does not appear to have been directed to the very remarkable [illegible] successful Chicago [illegible] pool, which [illegible] for four years the "Saratoga conference," and [illegible] substantial results. It was [illegible] of the operation [illegible] good that led the Railroad Commission of Iowa to declare that [illegible] the only agency that can compel the [illegible] traffic [illegible] [illegible] the protection of the [illegible] of building and operating [illegible]

[illegible] from the report of the commission [illegible] [illegible] in the report of

[illegible]

[illegible]

SOCIETY, SESSION [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Regular Meeting, January 13, 1899.—President Bell in the chair. The [illegible]

[illegible] Characteristics of the English, Scotch, and Irish.

[illegible]

various forest reserves of the United States.

[illegible]

Arthur P. Davis, U. S. Geological Survey, gave an illustrated lecture on the Hydrography of Nicaragua.

ELECTIONS.—New members have been elected as follows:

December 16, 1898.—[illegible] Reed [illegible], Miss Virginia [illegible], James A. Dumont, R. E. Duncan, E. W. [illegible], Hon. J. L. [illegible], M. C., [illegible] H. Stewart, Miss M. L. Warren.

[illegible]

[illegible], Miss Lewanna [illegible]

January 6, 1899.—Dr C. Evelyn Colbert, Henry Cleveland Perkins, Miss Margaret P. [illegible]

January 13, 1899.—Albert H. [illegible], Miss M. B. Hays, A. J. Henry, Capt. [illegible] Mr Tam Ye [illegible]

[illegible]

Miss [illegible], Henry E. Sawyer, Mrs Fanny Bullock Workman.

MAJOR JED HOTCHKISS

[illegible] topographer and mining geologist [illegible] development of the resources of [illegible] most part. During [illegible]

E. Lee and "Stonewall" Jackson, and [illegible] which these officers conducted their campaigns.

[illegible]

of her husband's work for publication.

[illegible]

meningitis, resulting in his death. H. G.

THE AMERICAN ANTHROPOLOGIST.

American Indians
...ontributors are America's foremost scholars

the January number

...Handsomely Printed Abundantly Illustrated.
Published Quarterly—Four Dollars a Year.
Volume XII Begins with January, 1910.

...THE AMERICAN ANTHROPOLOGIST
G. P. Putnam's Sons, 27 and 29 West 23d Street,
New York City

THE AMERICAN GEOLOGIST.

1890.

The Oldest Exclusively Geological Magazine Published in America

TERMS.

...y Subscription in the United States $3.50 a year
                                        4.00 a year

AMERICAN GEOLOGIST

AMERICAN GEOLOGIST

geological publications and brief notices of current geological work in

THE GEOLOGICAL PUBLISHING CO.,
...

For the most complete, authoritative, and attractive publication on the KLONDIKE, send for the April, 1898, number of THE NATIONAL GEOGRAPHIC MAGAZINE, containing large official map and numerous illustrations. By mail for 25 cents.

For the best up-to-date description of CUBA, physical, political, and industrial, send for the May, 1898, number of THE NATIONAL GEOGRAPHIC MAGAZINE, containing numerous maps, diagrams, and illustrations, including fine portrait of Captain Chas. D. Sigsbee, U. S. N. By mail for 25 cents.

For a chart of the world, 48 by 30 inches, showing all CABLE AND OVERLAND TELEGRAPH LINES, and also COALING, DOCKING, AND REPAIRING STATIONS, with explanatory article, send for number 3 of volume 7, NATIONAL GEOGRAPHIC MAGAZINE. By mail for 25 cents.

[illegible] NATIONAL PRINTING, WASHINGTON, D. C.